



**November
2015**

The Surrey Amateur Radio Club *Communicator*



The Newsletter of the Surrey Amateur Radio Club

November 2015



At The Last Meeting...

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At The October Meeting...

Minutes of the October 14, 2015
General Meeting

Introduction

The meeting was opened at 1900 hr by Director (and Chairman) Brett Garrett VE7GM. Brett welcomed visitors and new members: Anthony Abramski VE7WQX and Bob Houghton VA7EOD.

Financial Report

Scott Hawrelak VE7HA provided the balances for the chequing and savings accounts and a breakdown of the raffle expenses and income. A separate account for the clubhouse fund will be set up shortly. Raffle income was \$501 for each club (LARA and SARC) after deduction of expenses and prizes.

Cruise-in and Raffle

Al Peterson VA7ALZ confirmed that the LARA/SARC event was a success both financially and otherwise. Chris Cowx VA7CWX stated that assistance was provided to several persons who needed help at the event and that the organizers were appreciative of the job done by the two clubs.

November Meeting Date

Brett VE7GM confirmed the date of the November meeting has been changed from Nov. 11th to Nov. 4th in consideration of the former being Remembrance Day.

Christmas Party

The Christmas party will be on Dec. 5th at the Kalmar Restaurant. SARC's organizer, Jinty Reid VA7JMR reviewed menu options and, after a show of hands, advised that turkey would be the featured meat dish, with vegetarian option also available. A decision on the cost to each member will be made by the Executive shortly. Jinty noted that door prizes are needed and she has provided letters of request and letters of thanks for donations.

The main door prize will be a \$100 gift certificate. Jinty must know by Nov. 22nd who plans to attend.

Repeater Report

President Mike Plant VE7AT reported that after retuning of the cavities by Dave Cameron VE7LTD, the 220 repeater is now installed at the repeater site and will be operational shortly after new coax jumpers are fabricated. The plan is to install a Raspberry pi IRLP/Echolink node on the 220 repeater.

Regarding 2m and 440 repeaters, Dave VE7LTD is currently working on modifications to the second node and once that is done and jumper cables prepared, the two repeaters will be unlinked, with each connected its own IRLP/Echolink node. A change in the net script will be necessary to reflect these changes.

Clubhouse

Mike VE7AT reported that a business case has been prepared to support a request to the City of Surrey for a clubhouse site, and the intention is to present it to City representatives shortly.

Membership

Brett VE7GM stated that 46 members are now paid up for this fiscal year. Since dues were payable as of last June 1st, any unpaid members as of Nov. 15th will be dropped from the membership list.

Communicator

John Schouten VE7TI advised that preparation for the November Communicator will begin shortly and, as always, contributions from members are welcomed, keeping in mind the submission deadline of 23 October.

QSL Manager

In the absence of QSL Manager, Heinz Buhrig VA7AQ, Brett VE7GM reported that the transfer of duties to Heinz will take place on October 18th.

Net

In the absence of Rob VE7CZV, Brett VE7GM stated that 4 net control operators are needed for backup positions. The following members agreed to take on backup duties: 2nd Tuesday: Sheldon Ward VA7XNL, 5th Tuesday: Kapila Jayaweera VE7KGK; 4th Tuesday: Ralph Wrotniak VA7UB subject to confirmation of acceptable repeater access from Langley.

Website

No report available in absence of Website manager, Howard Ticzon VA7HTZ.

SEPAR

No report available from SEPAR liaison rep, Stan Williams VA7NF.

Breakfast Meeting

Mike Plant VE7AT advised that the attendance on Saturday has been improved over Friday, and is growing. After discussion, Mike moved that the

breakfast meeting be officially changed to Saturday, seconded by Kjeld Frederickson VE7GP and the motion carried.

New Business

Scott VE7HA reported that business cards had been ordered from VistaPrint for the President's use. The cost was \$18.88 for 500 colour cards - a very good price. If others wish to order, look for the specials which are offered on TV. QSL cards are also available from VistaPrint. Thanks to Al Peterson VA7ALZ for suggesting VistaPrint.

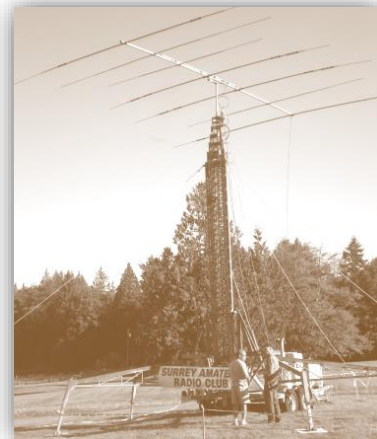
Featured Speaker

After a short break, the meeting was turned over to John White VA7JW, who gave a well-received presentation on baluns - what they look like, why they are needed and what they do along with some caveats regarding RF and safety grounding.

The meeting was adjourned at approximately 2100 hr.

Minutes prepared by:

~John VA7XB
Secretary



The **SARC Communicator** is published monthly except July and August for members of the Surrey Amateur Radio Club.

To subscribe, unsubscribe or change your address for e-mail delivery of this newsletter, notify SARCcommunicator@outlook.com

Non-members living in the Greater Vancouver area may receive one trial issue.

Beyond our membership area, annual Communicator subscriptions are available for a \$5 donation towards our Field Day fund.

SARC maintains a website at www.ve7sar.net that includes club history, meetings, news, photos and other information.



Breakfast Reminder

The SARC breakfast has been moved to Saturday at the same place, the Kalmar Restaurant at 80th and King George Hwy in Surrey at 9:00 am. Bring your significant other, bring your family, see old friends and have fun.

On The Cover...

The 220 MHz repeater is installed in its bay at our repeater site. Here Mike VE7AT checks off the installation steps. The repeater should be available for testing at 223.960 MHz minus 1.6 offset and a tone of 110.9 Hz.



November 2015



The Contest Contender

Brett Garrett VE7GM

November starts out fairly quietly as far as high-profile contests go, but on the weekend of the 7th - 9th we have the first ARRL Sweepstakes (CW version), followed two weeks later by the SSB version.

By the time you read this, October will be over and the California QSO party, the Oceania DX contests (both phone and CW versions), and the CQ Worldwide SSB DX contests will be part of contest history for 2015. I hope most of you gave at least a couple of these a try. We're on the downside of the sunspot cycle, so it could be "now or never" for DX contests for most of us. Your next chance for conditions as good as they are now (as bad as that may seem) could be the end of this decade.

Incidentally for those of you who haven't already discovered them, the ARRL Propagation bulletins can be found archived here:

<http://www.arrl.org/w1aw-bulletins-archive-propagation>

And while we're on the topic, the best propagation forecasting software I'm aware of (and free, at that) can be found here: <http://www.voacap.com>

Have a look at the site carefully so you don't miss the point-to-point propagation predictions, the coverage area maps, and the Nordic-based HF propagation-monitoring cluster. Although the spots for the monitoring cluster are CW, they show where signals received at the monitoring cluster are originating from, in real-time, and the summary at the top of the page shows the number of spots per band, which gives a fair idea of which bands are open at the monitoring location.

November starts out fairly quietly as far as high-profile contests go, but on the weekend of the 7th - 9th (all dates and times UTC) we have the first ARRL

Sweepstakes (CW version), followed two weeks later (21st - 23rd) by the SSB version. This contest has a wonderfully challenging exchange that is great for testing (or proving) your skills. Full information can be found here:

<http://www.arrl.org/sweepstakes>

Be sure you read the exchange requirements carefully!

Between the two versions of the Sweepstakes we have the RTTY version of the Worked All Europe DX Contest. This could be challenging without a good antenna and an amplifier. An interesting feature of this contest is the QTC Traffic bonus points. If you find RTTY boring, or consider yourself an RTTY expert, this is the contest for you. Figuring out how to get your contest logging program to send QTCs to other stations will get your brain cells revved up, and actually managing the process will keep you on your toes in the contest. The rules (including a full explanation of QTCs) can be found here:

<http://www.darc.de/referate/dx/contest/waedc/en/rules/>

If you aren't up to sending the QTCs, note that they are optional, so you can still do the contest in a mindless, er, I mean simplified way.

The Kentucky QSO Party will be on the same weekend (14th - 15th) for those of us who have pee-wee stations that can't get a signal off the continent, or would prefer to practise radio using a microphone or paddle rather than a keyboard.

And for microphone aficionados with better-equipped stations, there is one more contest on this weekend: the JIDX Phone Contest. Even if you find yourself



with an embarrassingly simple station, Japan is probably the easiest DX we can get from the west coast, and all it costs to try is some time at a radio, so you don't have anything to lose by giving it a shot. You can find the rules here:

<http://www.jidx.org/jidxrule-e.html>

For CW operators, November wraps up (28th - 29th) with a biggie, and well worth the wait: the CQ Worldwide DX contest. Multipliers by the dozen (CQ zones and countries, per band), and suitable for all stations, big or small. While contacts with our own county don't count for points (just multipliers), from our location it's easy to get contacts with the US, for two points each. The exchange is simple (RST plus CQ zone), so if you love to pound brass, this one is for you! You can find the rules here:

<http://www.cqww.com/rules.htm>

We don't (at time of writing) have any offers of hosted contests for November, but I'll advise contest group members by email if one arises.

As always, for regular mid-week contest practice, CW testers have the CWops Weekly Mini-CWT test (<http://www.cwops.org/cwt.html>) and SSB enthusiasts have the Phone Fray (http://www.perluma.com/Phone_Fray_Contest_Rules.pdf). The SEPAR Tuesday night 2-m net is now starting at 19:15 (PT), which makes it easier to check into the SEPAR net and then jump over to the HF bands for the Phone Fray. The Phone Fray is an easy contest for anyone with HF SSB capabilities, so be sure to give it a shot. (We need some more local action, hint, hint).

As always, you can find a list of most of the latest contests from the (customizable) WA7BNM contest calendar (<http://www.hornucopia.com/contestcal/index.html>), and by checking the monthly ARRL "Contest Corral" lists (<http://www.arrl.org/contest-calendar>).

73 & GL in the contests!

~ Brett VE7GM

The Phone Fray is an easy contest for anyone with HF SSB capabilities...

Great Tips...

On a weekend where there are multiple compatible contests running at once, here's a nice way to be able participate in a bunch of them, courtesy of the PVRC Newsletter:

N1MM Logger+ Hint for Multi-Contest Weekends

On many weekends there are more than one contest I might dink around in, like simultaneous QSO parties and the SAC or JA events. In N1MM you have always been able to start up multiple contest logs and go through the "Open Log in Database" menu entry to switch between them. But in version 1.0.5176 or later, N1MM+ now has a nice short cut: · With your cursor in the Entry window, hit ALT+F - that brings up "active" contest log list · Select the number in the list of the contest you want to switch to, type in that number and hit Enter · Voila - you are logging in the other contest.

~ John K3TN



November 2015



Contest Season Has Begun

John Brodie VA7XB

CQ WW DX SSB Contest

"I hope most of you tried the CQ Worldwide SSB DX contest. If you missed the superb propagation this last weekend, you'll be kicking yourself for a very long time.

From my QTH, even with 100 watts into a wet salted shoestring, I managed to work Latvia, Estonia, Mexico, China, Mariana Islands, Australia, New Zealand, Uruguay, Asiatic Russia, Iceland, Finland, Switzerland, England, Belgium, Guam, and, of course, the old standbys of Japan, Hawaii, Alaska, the US, and Canada (OK, so maybe the Canada contact wasn't so much DX, but over the Rockies at least).

And then I spent Sunday afternoon at John VA7XB's QTH with his excellent station and worked places I've never even heard of. It was a weird experience, for me, to have stations halfway around the world respond to my first call.

As I said, if you missed this last weekend, you'll be kicking yourself for a long time."

~ Brett VE7GM

It happens every year at this time... one of the most popular DX contests. It was the CQ WW DX contest for SSB held the weekend of October 24 and 25, and SARC was there to show the flag. Brett VE7GM and John VA7XB shared the honors. John dusted off his HF gear which had sat idle all summer after FD and got all the equipment tested and talking to the computer on Friday before the contest. The 80-40 wire antenna was not yet repaired after the August windstorm so the effort was strictly 20, 15 and 10 metres. Things got moving early Saturday morning as Europe opened up on 20 by 8 am and 15 m shortly after, and both bands remained usable throughout the day. Later in the morning the Middle East came alive, then Indonesia.

Some notable confirmed contacts were A73A and A71CV (Qatar), V84CQ (Brunei), H21TL (Saudi Arabia), 3V8SS (Tunisia) P3F Cyprus, 9K2HN (Kuwait) and HS5NMF (Thailand) plus numerous others of less exotic variety.

A few rare India (VU) stations were also on the air but we could not bust the pileups. The Caribbean featured prominently later in the day. This pattern continued Sunday morning until 1300 hr when Brett VE7GM joined the effort and moved onto 10 m to pluck some fresh fruit off the band. Once he got into the swing of things and worked most of the available stations by search-and-pounce, he moved to Run mode at which point the activity became frenetic and his rate increased dramatically, as shown on the screen shot. At the end of the contest his rate was an admirable 180 Qs/hr, leaving no time to catch his breath or quench his parched throat.

We used the new and improved N1MM+ logging software, which worked flawlessly as did the other gear. Here are the statistics for the contest; not bad for a few hours work:

Operator	14Mhz	21MHz	28MHz	Total
VA7XB	210	57	0	267
VE7GM	134	60	44	238
Total	344	117	44	505



Above: N1MM show the rate increases dramatically when changing from S&P to Run mode.

Right: Brett Garrett VE7GM polishing his SSB skills in the CQ WW DX SSB contest weekend of Oct. 24th.





QRZ.COM

Who are you?

Mike Plant VE7AT

More and more I hear new hams on the airways and look them up as many hams do, on QRZ.com to get a glimpse behind the voice and find the call sign is unmanaged.

This is WRONG for two reasons!!!!

1. Another ham or pirate can assume your call sign, register it and cause you untold problems on the air. Not to mention trying to get your call sign released by QRZ. First impressions are important and many a ham will remember a bad conversation or experience on air and ignore any calls you make. One thing we hams are good at, is talking on and off the air, so it follows that we'll tell all the good and bad points of ve7???

Make it a priority and register your call sign online as soon as possible.

2. Whether we are locally "chewing the rag" or working distant HF or digital Nodes around the world, We hams love to look up the person on the other end of the conversation as we talk. This serves several purposes at once. We get to look at their interests in the hobby and sometimes a look at their station and antennas. We can learn how active or get an idea of how long they have been on the air from the lookup counter. There is also a details page, an online logbook, Ham news, Swap meet and amateur related forums. Not bad for free is it? . However if you wish to use QRZ along with your favorite logging program you will have to donate to the site annually, the alternative to donating, is to purchase a CD every few years.

So go ahead register and look me up, then show us what "you" have got.

~ Mike VE7AT

*Log in to QRZ.com
and set up a profile
for your callsign*

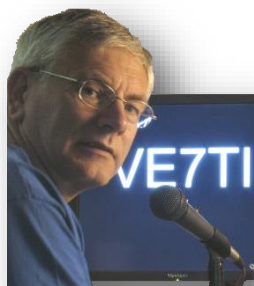


*Left: SARC has another contest credit.
First Place BC Multi-Operator, Single
Transmitter, Low Power in the 2014
RAC Winter Contest.*

*Right: SARC members working
VE7RAC at Fred VE7IO's station also
fared well with a first place BC Multi-
Operator Multi-Transmitter*



November 2015



Tech Topics

John Schouten VE7TI

The Power Gate: Keeping The Voltage On

The commercial alternatives are good, but pricey.

Here is an option for less than \$10

In the past two issues of the SARC Communicator, we have featured circuits that will provide you with a reliable, robust power source. In September it was Hiu Yee VE7YXG's simple Gel-Cell Battery Charger, and last month John Brodie VA7XB's low cost Battery Monitor Project. This month we'll round out this series with a device that will automatically switch your station to battery power if the AC fails, and switch it back when the power comes on. It is both inexpensive and simple, yet reliable as there is only one part.

First, let's look at the commercial alternatives. There are a number of solutions on the market including one, quite expensive, at US\$140, known as the [West Mountain PwrGate](#). This device uses solid state devices to charge and



automatically insert a backup battery if there is a power outage, and to switch back to the power supply if it is restored.

You will note that the PwrGate above is housed in a large heat sink. This device used Schottky diodes which can generate significant heat. Those fins are there to dissipate that heat. Heat is wasted energy, so we look at an alternative device that is more efficient.



The low-loss PWRgate is billed as being simple, safe, and reliable, and easily able to add backup battery

power to your home station or go-kit. The Low Loss PWRgate uses MOSFET power transistors to switch the load between

power sources with less than a 20 mV drop, much smaller than systems that use Schottky diodes. This keeps the power losses to a minimum and delivers full battery power to the load. The device is rated at 25 Amp total, with 3 power outlet ports, ARES standard Anderson Pole Connectors, 3 ozs, and US\$49.95 plus shipping by USPS Priority mail. Note that there is no heat sink here, and it does not charge the battery. The distributor, [Flint Hills Radio Inc.](#) will also sell you a solar battery charge controller for US\$ 39.95 plus shipping and a Smart Lead-Acid Battery Monitor and alarm for another US\$ 29.95 plus shipping.

Makes our projects seem pretty reasonable doesn't it?

So back to the low cost alternative. This device transfers up to 40 amperes at up to 14 volts DC continuously. It is a safe way to connect both a 12 volt battery and a 13.8 volt power supply to a load, while electrically isolating both from each other. Whenever your power supply is on, the supply feeds the load, and if you add Hiu's charger, will also charge the battery, keeping it healthy and ready for use when the power supply is off or loses AC power, all at a cost of about CA\$ 10.00

I did some time in the seventies as a service technician while in my early twenties. One of the products I had some exposure to was alarm systems. In those days before PWRgate, a simple single pole double throw (SPDT) relay was used for the same purpose. The relay is the same as used in many

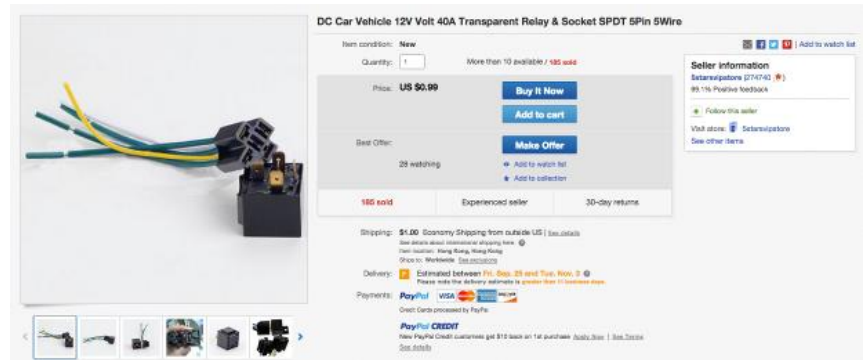


automotive systems. In this application, if the magnetic relay coil is activated, when normal power is on, the contacts switch in the power supply. If the power supply loses voltage, as in a power failure, the magnetic coil is no longer activated and releases the contacts, which then switch in the battery backup. The coil, now deactivated does not rob the battery of any current. A very simple solution with no loss through excessive circuitry or heat. The coil uses a bit of current from the power supply to remain activated, but this is minimal.

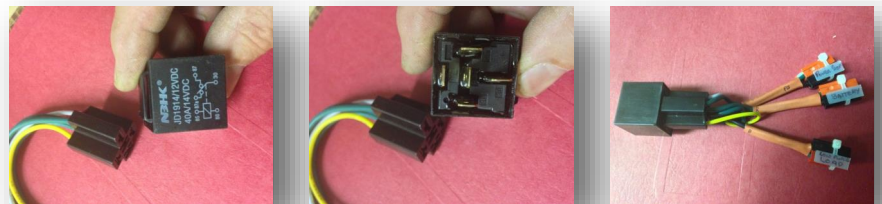
These relays are commonly available at auto supply dealers but I ordered mine through eBay and received two, with sockets and mounting brackets, for US\$ 3 shipped. They are rated for 12-14 Volts DC and 40 Amps, more than enough to handle the current that most transceivers would draw. Wiring is fairly straight forward and I used three sets of Anderson PowerPole connectors. One for the battery, one for the power supply and one set for the load, being my transceiver. A numbered connection diagram was stamped on the top of the relay I received. The relay coil is wired in parallel with the power supply. If the power supply is on, the relay keeps it feeding the supply circuit. If the power supply goes off current is diverted from the battery.

Once I figured out the contact layout, the actual construction took me only about half an hour, definitely something that can be tackled even by a beginner. Pair this with Hiu's charger and John's low voltage alarm and you're good to go uninterrupted if the power goes out.

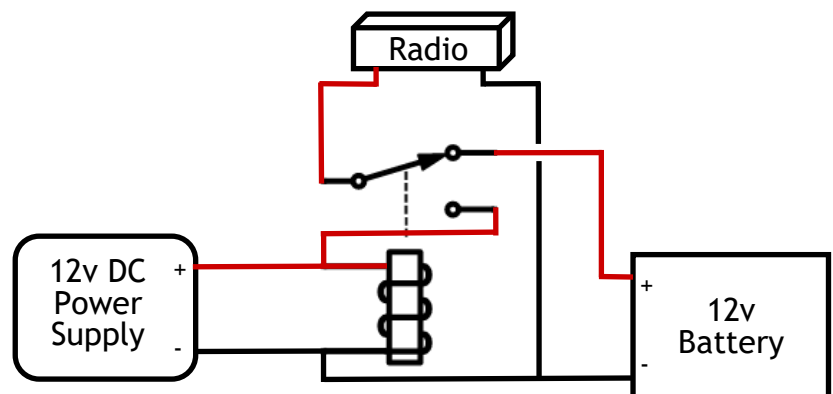
- John VE7TI



The eBay ad for the relays. Two, including sockets for US\$ 3 shipped



Wiring is straightforward with a diagram of the connections stamped on the relay case. I used standard Anderson PowerPole connectors. Join all the common (negative) leads together.



My set-up was completed none too soon as the windstorm brought a tree down on a house up the street and knocked out our power for 48 hours. I was able to remain on the air thanks to a couple of good back-up batteries although I was surprised how little local radio activity there was.

NOTE:
Remember to book my
SARC Christmas Party
Lunch ticket!

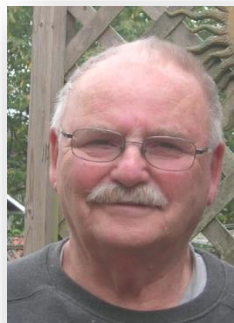
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Radio-Active

Jinty Reid VA7JMR



Heinz Buhrig
VE7AQ

Heinz was born in Aumund near the town of Bremen in Germany. He attended school up to the age of 16 but was unable to continue his formal education further due to his family being unable to pay school fees because of the difficult war and post war years. Even though he was very young he remembers the bombing. After leaving school he worked in the shipyards until 1953 when he worked for a crane manufacturer.

In 1956 he emigrated to Marathon, Ontario, Canada. It was there that he met Leontine, nicknamed Tibby, a French Arcadian registered nurse whom he married in 1958. In Canada he worked as a Geophysics Surveyor for 1 year then for a pulp mill. Heinz and Tibby had 3 children of their 6 children (4 girls and 2 boys) in Marathon before moving to Coquitlam in B.C. in 1963. They had their remaining 3 children in BC.

In Coquitlam, Heinz worked for a German company which manufactured piping. Due to the noise of his work place Heinz developed some deafness which remains to this day. With this company he "moved up the ladder" to the position of supervisor. In 1972 Heinz and Tibby moved to Surrey and in 1978 they built their present home in North Surrey. Heinz started his own trucking business from which he retired in 2004. Tibby had retired much earlier from nursing to be at home with her children.

It was while he was still in Germany that Heinz became interested in radios and remembers building antennas which he hooked up to his regular radio. While living in Marathon he was introduced to ham radio by a fellow amateur radio enthusiast. In 1961 Heinz obtained his Amateur License with the call sign of VE3EEP which he said he disliked, but at that time Hams were not allowed to choose their call signs. When he got his Advanced License he used the call sign of VE7BMS which he changed to VE7CBH and finally in 2000 he obtained one that he liked enough to keep, VA7AQ, and which was easier to use on DX.

Heinz joined SARC when it was based in a school in Newton. His first radio was a Halicrafter SX-42 and his transmitter was an 811 tube which was too hot to handle when transmitting! He has installed a 72 foot antenna on his present property. Now his radios are: ICOM 756 Pro 3, ICOM 7000, Kenwood TH50, 2 handhelds and a Yaesu amplifier FL DX 2000. Heinz enjoys contesting, DX, PSK, and RTTY. His biggest involvement is activating IOTA Islands with his latest success being Pleasant Island, Alaska. Although he contests at Field Day he also does this from home.

Among his other interests are fishing, camping, and travelling with his trailer as well as having cruised to Africa, the Caribbean, Mediterranean, Baltic, Alaska, Mexico and Panama. In the future he and Tibby would like to cruise to South America and to Asia.

Tibby describes Heinz as easy-going, helpful, hardworking and loving, though he can be stubborn. He is a man that loves his family and extended family. They have 14 grandchildren and 10 great grandchildren. As a married couple they have been happily married for 57 years which is no small accomplishment these days. Tibby says they enjoy living a quiet life though that must be a challenge at times considering how many grandchildren and great grandchildren they have!

- Jinty Reid VA7JMR





Satellite Specialty Group

John Schouten VE7TI

Listening To A New 'Bird'

You have seen a number of articles in the Communicator over the past year on making contacts via satellite. Some of us have homebrew and/or commercially made antennas that do a pretty good job and allow us the fun of contacting a far off place via a satellite in earth orbit.

Now that we once again have a satellite that can be worked with a dual-band hand-held transceiver it is worthwhile to review what you need to get started. Even if you just listen, there are a couple of satellites that you can monitor.

The Transceiver

You can use a mobile rig or a hand-held. But it must be capable of receive/transmit on at least the 2m and 70cm bands.

Program in any tones as some satellites require a CTCSS tone to turn on their transmitter. This is done to conserve precious power.

Program in five 5Khz frequency steps above and below the satellites 'centre' frequency. You will need to switch up or down as the satellite passes overhead to make up for the [Doppler Effect](#).

Check out this tutorial: http://www.work-sat.com/Home_files/WORK-SAT-08-2015.pdf

The Antenna

You may be able to work the newest 2m/70cm satellite AO-85 (Fox 1A) with a rubber duck but it is not likely to be too successful. Best to spend the bucks and buy one ready made or, if you have access to some basic tools, it's not that difficult to make your own.

There is a very good article about making your own hand-held antenna at URL:

https://www.youtube.com/watch?v=Hy_XwvMmlro

Software Aids

You can make life a whole lot easier by using a smartphone, tablet or laptop to watch where your satellite is located and when it comes into view. I use a variety of tools but mostly I like 'Heavens Above' on the web <http://www.heavens-above.com/>

When I'm not handy to an Internet connection, I'd recommend the following free apps. For your Windows laptop 'Satellite Explorer' at URL:

<https://www.microsoft.com/en-us/store/apps/satellite-explorer/9wzdncrdfqx1>

For iPhone or iPad I use 'Satellite Tracker' <https://itunes.apple.com/us/app/satellite-tracker/id306260378?mt=8> but "Satellite Explorer Pro" is also very good.

<https://itunes.apple.com/us/app/satellite-explorer-pro/id669039200?mt=8>

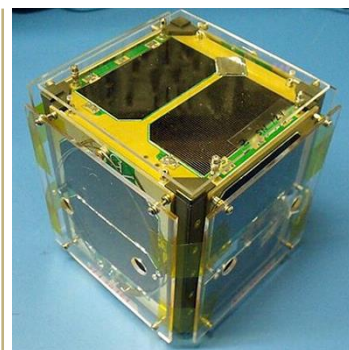
For Android try 'AMSAT Droid Free'

<https://play.google.com/store/apps/details?id=uk.me.g4dpz.HamSatDroid>

Who knows, you may even end up talking to the astronauts aboard the International Space Station. They're hams too and occasionally spend some of their spare time on the radio. Remember though that their work day is based on Universal Time.

Hopefully this information gives you an incentive to try to amateur satellites. Perhaps I'm easily impressed but it still gives me a thrill when I make a contact using this medium. You may also consider coming out for a SARC Satellite Group session when they are held. John VA7XB has a very good automated tracking station to work the birds and he opens it to members frequently.

~ John VE7TI



The newest amateur satellite AO-85

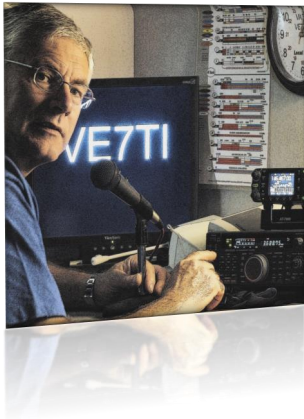
*Uplink: 435.180 MHz,
67.0 Hz PL/CTCSS*

Downlink: 145.980 MHz

Period: 1hr 37min

You can use a mobile rig or a hand-held

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QRM

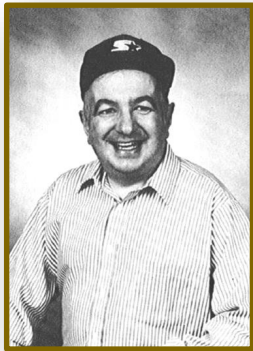
...from the Editor's Shack

*Do you have a photo or bit of club news to share?
An Interesting link?*

*Something to sell or something you are looking for?
eMail it to [SARCcommunicator @ outlook.com](mailto:SARCcommunicator@outlook.com) for inclusion in this column.*

The SARC Christmas Party

Important reminder to book your seat(s) for the SARC Christmas lunch on Saturday, December 5th. It will be at the same location as last year. Seats are limited, don't be disappointed, please reserve now with jinty.reid@gmail.com (see the invitation on [page 26](#)).



Remembering David Savoie VE7IDU

If you have been on a local net, including our own SARC and SEPAR nets, you will know David. He passed away on October 15th at the age of 74 years. David was a long-time member of the Burnaby and North Shore Clubs.

The Rack At The Repeater Site.

Watch for an announcement at the next general meeting about the availability of the new 220 MHz repeater. As we are adjusting the functions of our three repeaters, please use IRLP node 1736 on the VHF side for regular calls/net's etc, and node 1737 on the UHF side for reflector linking and lengthy connections.



Mike VE7AT sent in this photo of a novel beam antenna. Is this part of your 220 MHz deployment Mike?





Page 13—News You Can Lose

The Lighter Side of Amateur Radio

Oooops!

Yesterday, I went over to the local radio store to get a part for my antenna. When I was ready to pay, the cashier said, "Strip down, facing me."

Making a mental note to complain, I did just as she had instructed. When the hysterical shrieking and alarms finally

subsided, I found out she was referring to how I should place my credit card in the card reader!!!

I've been asked to shop elsewhere in the future. They need to make their instructions to seniors a little clearer. Besides, I don't think I looked that bad !!



GRAIN HARVEST, Idaho — A new study by the National Radio Retransmission Legion indicates that no ham is having an actual conversation on any frequency in the 220 Mhz band.

"We all bought one of those low-cost Chinese handie-talkies," says the potato farmer via telephone from his home just outside of LaCrosse. "Now all we hear on the local repeater is every 6th word with lots of garbled transmissions and noise. Those radios are feature packed with everything except a good receiver. Oh, there's the occasional complete sentence... but nothing you could even vaguely describe as a full conversation."

As a result of the study, the North American VHF Repeater Owners Association is considering a resolution to "power-down" all repeaters between the hours of 7am and Midnight since no one is able to make radio contact anyway.

~ HamHijinks.com

Antenna Romance...

Two antennas met on a roof, fell in love and got married.

The ceremony wasn't much, but the reception was excellent.

Since they were a perfect match, soon they generated harmonics.

Wrapped the harmonics in dipoles.

But later the harmonics turned out to be parasitic elements.

The true story: She was a tri-bander and he felt trapped, so they went on separate beam headings

Thanks Jinty

~ www.AC6V.com



November 2015



Back to Basics

John Schouten VE7TI

From The Basic Question Bank

Question B-005-013-001

How is a voltmeter usually connected to a circuit under test?

A handy thing to know, particularly as basic digital multimeters (DMMs) are now very inexpensive, usually less than \$10., and can be useful for many things around the home like checking the condition of batteries.

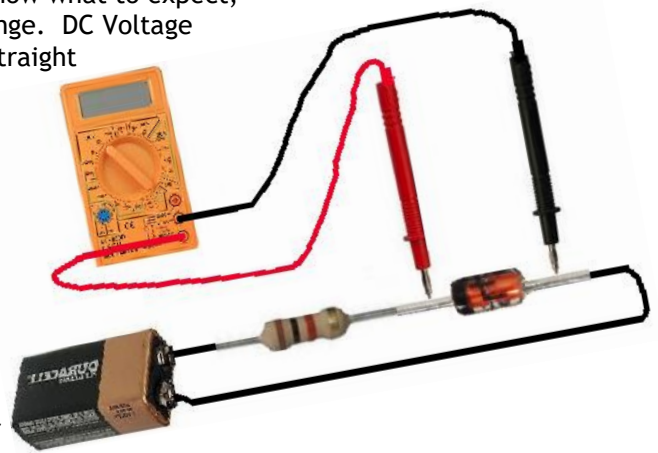
The two types of voltmeter you may encounter are digital and analog. Analog meters are **recognizable** by their printed scale and a moving needle.

Voltage is always measured in parallel with a device, current in series. If you recall Ohm's Law in your Basic Qualification, you will remember series, parallel and series-parallel circuits. If not, check this link: <http://www.physicsclassroom.com/class/circuits/Lesson-4/Two-Types-of-Connections>

On the meter, first set the knob to a voltage range greater than the expected voltage. If you don't know what to expect, set it to the highest range. DC Voltage range has a V- with a straight line next to it, AC generally a V- with a wavy line. For example, 2V measures voltages up to 2 volts, and 20V measures voltages up to 20 volts. In our circuit the meter is hooked up in parallel to measure the voltage of the component under test.

The correct answer therefore: In parallel with the circuit.

~ John VE7TI



SARC Amateur Of The Year...

We need nominations for our 2015 SARC Amateur Of The Year award. As there are more than one recipient please reply with your top three candidates.

Please remember the deadline for renewal of dues is Nov 15th 2015.

~ Mike VE7AT

Ham Radio is a twenty-first century hobby: A good video from Britain to show prospective Hams:

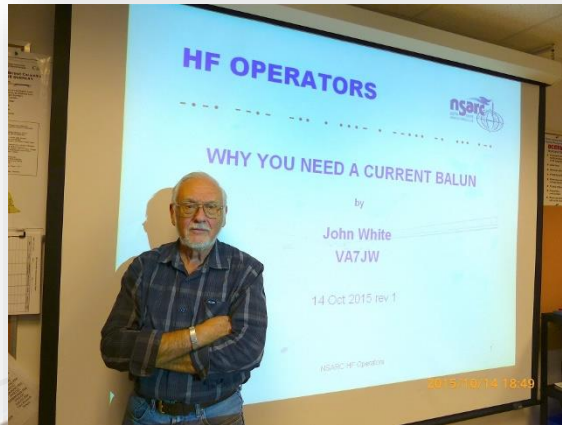
https://www.youtube.com/watch?v=8x6x_6mDVIQ&feature=youtu.be



At The Last SARC Meeting

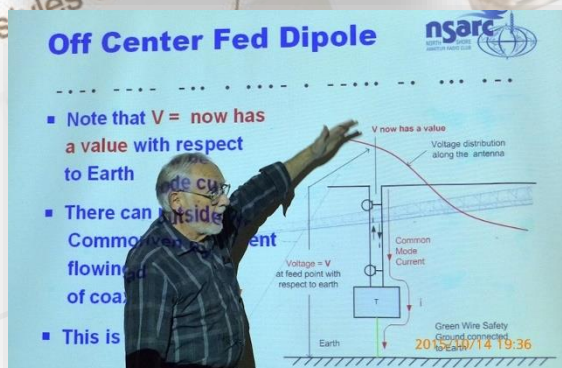
Photos Courtesy Of Hiu Yee VE7YXG

Wednesday, October 14th.



John White VA7JW presented an informative session on baluns and demonstrated the differences between current and voltage baluns through a series of slides and samples. John's presentation is at <http://www.nsarc.ca/hf/currentbalun.pdf>

See John's article on Page 16



What's this... are using a ferrite "core", on the coax material designed for use at

Ferrite Beads

Ferrites threaded on coax cable

November 2015



How The Current Balun Works

John White VA7JW

...the correct type of balun will lead to the successful integration of the antenna and feedline.

Introduction

It is common practice to use a balun when connecting a coaxial cable transmission line to an antenna. There are three electrical requirements to be met. Of these three, two are generally well known, but the third, maybe not so much. Addressing all three issues with the correct type of balun will lead to the successful integration of the antenna and feedline.

Requirements

1. Requirement #1 - Preserving Balance: The word BALUN is derived from the fact that this device connects a **BAL**anced antenna feed point, such as a dipole, to an **UN**balanced feed line, commonly being coax. Coax is unbalanced because the braid is connected to "ground" at the rig. Balanced and unbalanced circuits should never be connected together as the electrical properties of both circuits will be seriously compromised. The balun is the intervening item that transforms the unbalanced to the balanced.
2. Requirement #2 - Impedance Matching. The balun will commonly match a 50 ohm feed line impedance to feed point impedances of 50 ohms or 200 ohms, depending on the antenna design thus achieving a low SWR.
3. Requirement #3 - Suppressing RF on the feed line. This is the not so well understood issue that often results in RF problems in the shack. The use of the correct balun will alleviate many of the problems associated with RF on the line.

Antennas

The half wave dipole model is used to demonstrate the properties of a balanced antenna and the ways and means to properly feed it. The dipole antenna operates without a connection to an Earth ground, and so the feed point is a good

example of a balanced circuit, which needs to be connected to a balanced feed line. Coax is not a balanced feed line and therein lies a problem.

Verticals on the other hand are operated against an Earth ground which is a good example of an unbalanced circuit. The vertical can be directly fed with an unbalanced coaxial feed line. This style of antenna may make use of impedance matching networks at the feed point, but they are impedance matching networks, not baluns.

Grounds

Antennas and grounds go hand-in-hand, and it is important understand the role of ground as will be seen later in this article, (Figure 4).

Earth Ground means an electrical connection made to the soil through use of a grounding conductor such as a rod, plate, or wire etc. Our stations are Earth grounded as soon as the AC line cord of the rig is plugged in to the AC wall socket. The AC line cord contains the green wire safety ground conductor as required by the Canadian Electrical Code. This is to prevent shock hazard occurring should there be an insulation failure in AC power connected equipment. The green wire connects the rig chassis to Earth ground in the electrical service entrance panel in the residence. The consequence is that the station is mandatorily grounded to Earth.

Electrical Ground is taken to be the common voltage point in an electrical system. This would be the ground bar in the shack to which all equipment in the shack is connected with a ground wire. This is a safety ground to ensure that no hazardous voltage can exist between equipment. This ground bar is to be connected to the service entrance Earth ground.

Note that these grounds are Safety grounds. They are NOT Signal grounds or RF grounds.

Note - RF Ground does not exist. Quote: "The idea that earth ground electrodes provide a zero impedance sink that we can use to absorb or otherwise make unwanted signals or noise go away can't possibly be true". It is a total myth, pure and simple, having no basis in reality in this universe"

Feed Lines

The antenna is connected to the rig by the feed line. The feed line is not part of the radiating or receiving system. The antenna is the radiator/receiver. The purpose of the feed line is to transport TX RF from the rig to the antenna without radiating, and conversely, to transport RX signals to the receiver without picking up extraneous signals.

Coax is an unbalanced feed line with a centre conductor insulated from a surrounding, conducting braid which is the "return" circuit. The coax connector on just about every rig is a SO-239 bolted to the chassis and so the coax braid is always grounded in this connector system. TX and RX signals are propagated up and down inside the coax, like water in a pipe, and that means they are totally contained within and totally isolated from the "outside" world, neither radiating nor picking up signal. Thus coax is a shielded line. Also worthy of note is that the signal current on the centre conductor is equal and opposite to the signal current on the braid. Since the two opposing currents are very close together in the coax, and the fields surrounding each conductor are opposing, they would cancel at a distance, and no radiation takes place. These equal, opposite, close together signal currents are referred to as Differential Mode currents. One more thing - while the construction of coax lends itself to an intuitive understanding of shielding, there is one other very important property that clinches coaxial cable shielding effectiveness, and that is the Skin Effect on the braid. If unfamiliar with skin effect, please read the Sidebar now.

Balanced feeders consist of two wires placed side x side, commonly known as Ladder Line. There is no shield. However, the line does not radiate because the signal currents in each of the two wires are also equal and opposite and close to each other. These are Differential Mode

currents as well, and as such the electromagnetic fields developed around each wire will be opposing, and cancelling, this also means no radiation of signal takes place at a distance from ladder line.

Since the line is not shielded, the two conductors are vulnerable to extraneous signal induction. However, the induced currents will be equal in each wire as both wires "pick-up" equally well, being close together. Since they flow in the same direction in both wires, this is called a Common Mode current, quite different from the Differential Mode current flow. Common mode fields do not cancel and unwanted signal will be transported to the rig or antenna.

Circuits that terminate either end of the balanced line need to be balanced in themselves so as to reject common mode currents. Retaining line balance is essential for balanced line operation as grounding of one side will allow unwanted common mode signal current to flow in to the receiver. The SO-239 unbalanced, grounded, coax connection for the antenna feed line is unusable for balanced line connection.

Preserving Balance

Use of a proper balun can provide RF isolation between the grounded rig and unbalanced coax to the balanced requirement of the antenna. In other words, an unbalanced coaxial feed line can be coupled to a balanced antenna as long as there is an intervening balun. The balun can be placed anywhere in the coax feeder if ladder line is connected to the balanced side of the balun leading to an antenna's balanced feed point. Requirement #1 addressed.

Antenna Impedance Matching

Coaxial cables typically have a 50 ohm characteristic impedance, which turns out to be close to the radiation resistance at the feed point of a dipole antenna. Using a balun that offers a one to one (1:1) transformation ratio means that the 50 ohm unbalanced impedance of the coax on the primary side of the balun will match the 50 ohm balanced impedance of the dipole on the secondary side, while preserving the balance of the dipole.

Different styles of dipole-like antennas can have differing impedances which the balun

"The idea that earth ground electrodes provide a zero impedance sink that we can use to absorb or otherwise make unwanted signals or noise go away can't possibly be true". It is a total myth, pure and simple, having no basis in reality in this universe"

November 2015

...a balun is NOT an antenna tuner device; it can only match certain fixed impedance ratios.

must be matched with. Most commonly, baluns are offered with the ratio of 1:1 intended for basic dipole configurations as well as 4:1 for other dipole-like antennas such as Off Centre Fed or Folded dipoles where the feed point Z is higher, such as 200 ohms.

Note that a balun is NOT an antenna tuner device; it can only match certain fixed impedance ratios. Requirement #2 addressed.

RF On The Feedline

The “RF-in-the-Shack” experience is mostly due to RF flowing on the OUTSIDE of the coax feed line entering the radio room. This commonly manifests itself as RF voltage causing “tingles and bites” on conductive surfaces such as the key or mic when transmitting, or TX audio distortion due to RF feeding back in to the audio circuits, or unexplained computer behavior, and other RFI effects. Use of baluns that solve problems #1 and #2 will not solve problem #3 if the wrong type of balun is used. Requirement #3 remains to be resolved.

Rig-Coax—Antenna Schematic

Figure 1 represents the electrical circuit for a transmitter connected to a feed line and then to an antenna where the antenna is represented by a 50 ohm feed point Impedance. The Tx and Rx signals flow inside the coax as differential mode currents.

Note that while the transmitter chassis is connected to Earth ground, no current flows in that connection because there is no complete circuit from ground to

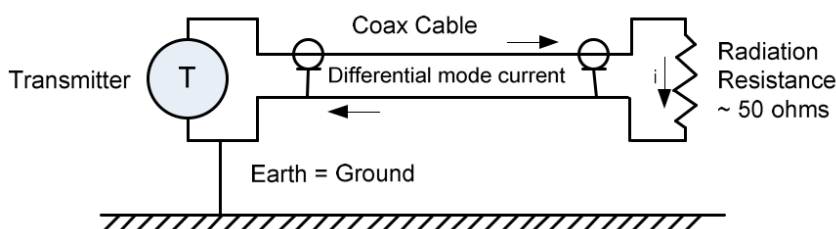


Figure 1

anywhere else. The RF currents are wholly contained within the loop.

Voltage Distribution On A Dipole Antenna

Figure 2 is the classic view of the voltage distribution along a half wave dipole.

The solid line waveform represents the standing wave voltage along the antenna at the peak of one-half cycle, where the electron flow in the wire is from right to left. On the second half cycle, as the current reverses, so does the voltage, as illustrated by the dotted line.

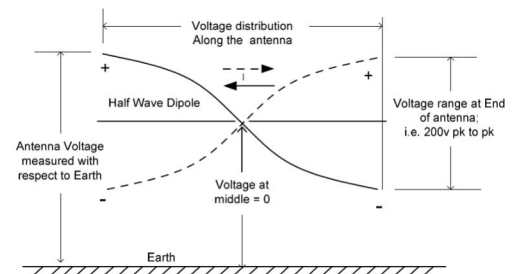


Figure 2

The voltages on the antenna are measured with respect to Earth. At all points along the antenna there is a voltage with respect to Earth. The highest voltages will be measured at the ends of the antenna because the antenna is “open circuit” there. The magnitude of the voltage at the ends will depend greatly on the transmit power and can easily reach 100’s of volts or more.

Only at the centre feed point does the voltage remain at zero with respect to Earth.

The Off-Centre Fed (OCF) Dipole Antenna

Figure 3 is an Off-Centre-Fed antenna, perhaps better known as a Windom. This class of antenna is known for multiband capability. As with the dipole, the same standing wave voltage is developed along its length. The only difference is the location of the feed point with respect to

Earth. Note that the voltage “ V ” on the antenna at the feed point is not zero as seen in Figure 2.

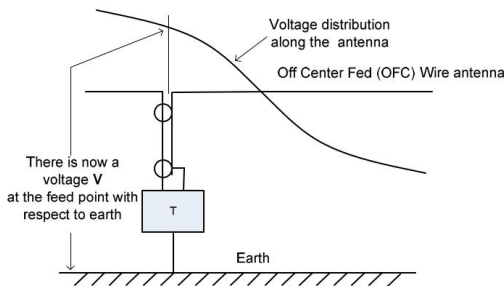


Figure 3

The feed point impedance is not 50 ohms as it rises as one moves away from the centre where higher voltages and lower currents prevail (Ohms law). Typically the feed point distance from centre is chosen to have an impedance of about 200 ohms where a 4:1 balun would be used.

Figure 4 is a redrawn as a “block” diagram of Figure 3.

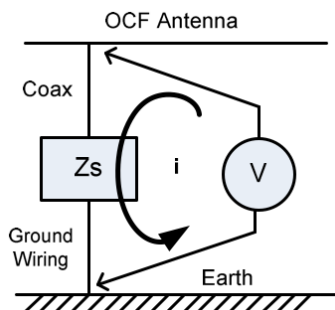


Figure 4

The voltage source V is the antenna voltage at the feed point with respect to Earth ground. The feed point is connected to the coax, the braid being a conductor, which in turn connects to the station labelled as “ Z_s ”. “ Z_s ” represents the rig and all other connected equipment, and wiring, in the shack and it is an indeterminate series impedance in the circuit. In turn “ Z_s ” connects to Earth ground through the green wire safety ground of the AC line cord at the very least.

This circuit forms a bonafide loop, that is, a voltage source at the feed point with respect to Earth drives a current down a conductive path consisting of the coax, station equipment, and ground wiring retuning the current Earth end of the voltage source.

RF current is driven by this voltage and flows on the OUTSIDE of the coax braid. This is by definition a common mode current because the current flows in a large loop and the opposing currents are NOT close to each so radiating fields develop. Radiating feed lines will distort the radiation pattern of the antenna system.

Differential signal currents inside the coax are not affected due to the shielding effect of the coax braid. It is the common mode RF current reaching the station that flows ON the surface of conductive equipment and wiring, and then to Earth. Since the impedance Z_s of this circuit is indeterminate, the amount of current flow is not predictable. However, a clamp-on RF ammeter such as an MFJ-854 will give an indication of the amount of current actually flowing.

The cure for Problem #3 is to insert a high value impedance Z_x that should be much greater than Z_s to reduce the unwanted (series) current to very low value, such as a few mA.

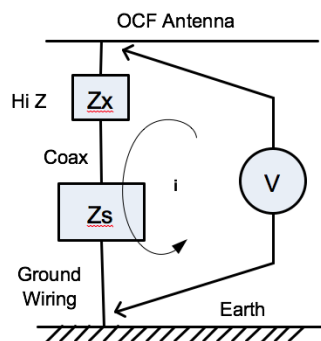


Figure 5

Z_x of the Current Balun, by design, has an inherently a high impedance, and effectively chokes off common mode current on the coax.

Consequently the current balun will meet the requirements of items #1, 2 and 3.

Differential signal currents inside the coax are not affected due to the shielding effect of the coax braid.

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Ferrite Beads (6A)



Ferrite Bead Balun (6B)



Packaged Implementation (6C)

Toroidal Ferrite Core
Figure 7Bifilar Winding Technique
Figure 8

Two Types Of Baluns

There are two types of baluns; the Voltage balun and the Current balun. Both types of baluns can look outwardly identical to each other but they are of quite different designs. The voltage balun has no common mode choking capability and is not the right product to use for suppressing RF on the feedline. Because it is impossible to visually differentiate between these two packaged products, ensure the product you buy is clearly labelled as a Current Balun for this application.

And Two Types Of Current Baluns

The Current balun is commonly implemented using two different techniques. One achieves a high common mode impedance, Z_x , using ferrite beads, Figure 6, and the other uses a transmission line transformer for the same purpose, Figure 7. Both of these implementations result in a high common mode impedance able to choke off RF currents on the feed line.

Ferrite beads, Figure 6A are a lossy magnetic material useful for increasing the inductance of a wire, cable, AC line cord etc. to discourage RF currents flowing on such cables. They are often used to control RFI problems. As seen in Figure 6B, the beads are threaded on a piece of coax contained within a PVC pipe per Figure 6C. This construction can only provide a 1:1 impedance ratio as there is no mechanism available to transform impedance since the coax is connected "straight" through. This form of current balun is the simplest and least expensive of the two designs.

Figure 7 shows the other popular implementation of a current balun where a transmission line transformer is wound on a toroidal ferrite core and is housed in an outdoor rated plastic enclosure.

Conventional transformers, such as used for AC power and audio have the primary winding wound on a magnetic core which generates a magnetic flux, which in turn couples energy to the secondary winding also wound on the core. Significant flux levels are developed in the core to transfer energy from the primary to the secondary and in doing so, the core incurs magnetic losses which result in overall heating of the transformer.

This type of operation is not suitable for RF applications where very low loss is required. To achieve these objectives, the construction, winding techniques and core materials for RF are very much different from the conventional transformer. Interestingly, the cores in transmission line transformers operate at zero flux and so losses are near zero. This is achieved by placing the primary and secondary (insulated) wires tightly together, side x side, as they are wound on the core. This technique is referred to as a bifilar winding, which essentially emulates a balanced line. Hence the transmission line transformer. Careful inspection of the wires in Figure 7 show this but are more easily seen in Figure 8.

There is zero flux in the core because the differential mode signal currents, being closely coupled, equal, and opposite in direction, produce no net flux in the core. Should one current decide to differ from the other, a net flux does develop which forces the currents back to equality due to the 1:1 winding ratio. No flux, no loss, no heat, and the signal is transferred unimpeded through the structure.

The antenna feed point voltage will drive a common mode current down both wires in the same direction. This looks like just one wire wound on a magnetic core and will result in core flux being developed which is nothing more than a RF choke. Hence the current choke aspect of the balun is realized.

The schematic of a current balun is shown in Figure 9, in circuit, between the coax and the antenna feed point

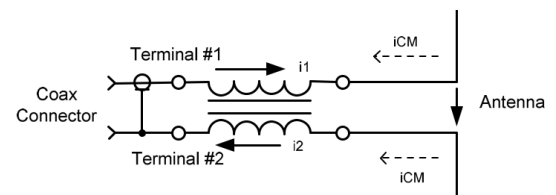
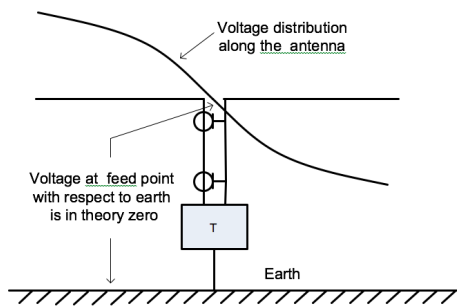


Figure 9

The bifilar transformer having an equal number of turns on both windings provides a 1:1 turns ratio. This would be a 50 ohm to 50 ohm application. For a 4:1 ratio, the windings are more complex and not described here.

Back To The Centre Fed Dipole

Many of us, author included, have simply connected coax directly to our dipole and operated happily ever after. One now ought to understand how we could get away with little to no problems with “RF-in-the-Shack”. Quite simply, referring to Figure 10, the voltage at the feed point is practically zero, and so little common mode current is driven down the feed line in to the shack.



Coax to Dipole - Direct Connection
Figure 10

While good luck and ignorance played a major role in this success, the reality is that dipole antennas are rarely balanced in practice. We are typically limited to where and how we can support the antenna. There are many and various non-symmetrical, environmental variations such as houses, trees, soils, aluminum gutters, house wiring etc. which tend to unbalance the antenna's electrical impedances either side of the physical feed point centre. This will shift the antenna voltage off the zero point away from the physical centre thus causing a voltage to exist at the feed point and start driving a common mode current down the feed line.

Good practice says that a current balun at the feed point is always well advised.

RF Still In The Shack?

Even with a good current balun on the feed line, there can still be RF flowing on the outside of the coax due to direct radiation from the antenna. This cannot be helped.

(Continued on page 22)

Sidebar – Skin Effect

At DC, current flow is distributed equally throughout the cross section of the wire. With AC currents, the flow migrates outwards from the centre of the conductor and crowds towards the surface with increasing frequency. At radio frequencies, most of the current is flowing near the surface since the current density decreases exponentially towards the centre of the conductor.

Braid thickness on a piece of RG-8 was measured at about 0.025 inches. One skin depth at 1.75 MHz is about 49 micrometers or ~ 0.002 inches and 63% of the total current is flowing within that 0.002 inches. Adding the next 0.002 inches of skin depth, now 0.004" accounts for 86% of all the current. When 5 skin depths are taken in to account, about 0.010 inches, 99.3 % of the total current is flowing in this thickness which is less than half the thickness of the braid.

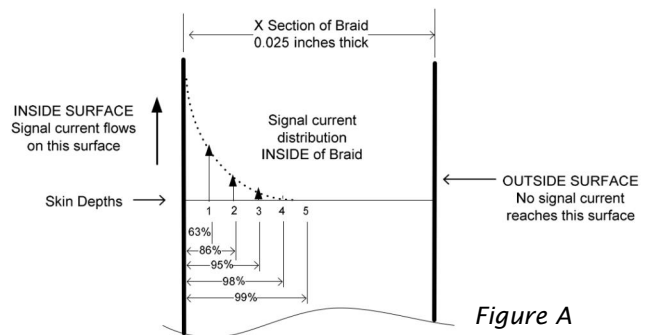


Figure A

If the frequency is increased to 30 MHz, the thickness of the 99% current “sheet” becomes thinner and is only about 0.060 micrometers / 0.0024 inches thick.

An on-line calculator, Figure B, can be found is at:

<http://www.siversima.com/rf-calculator/skindepth-calculator/#>

Figure B

Frequency(MHz)	Skin Depths	Current Density
1.75	1 49.28 um	63.2 %
	2 98.57 um	86.5 %
	3 147.8 um	95.0 %
	4 197.1 um	98.2 %
	5 246.4 um	99.3 %

As a consequence of this phenomena, we have transmit and receive signal currents flowing on the inside surface of the braid which do not appear on the outside of the coax braid (no radiation), and at the same time, undesired currents flowing on the outside surface of the braid do not penetrate to the inside surface of the braid. Effective shielding is achieved.

Referring to Figure C, current on the centre conductor flows over the entire circumference of the conductor. One might think that ought to be true with the braid with current flowing on both the inside and outside surfaces.

Examination of the cross section of the coax shows that the electric fields associated with the current flow terminate on surfaces of the centre conductor and the inside surface of the braid. Since the skin effect governs the depth of current flow, the braid carries the current on its' inside surface only and cannot penetrate to the outside surface.

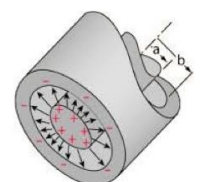
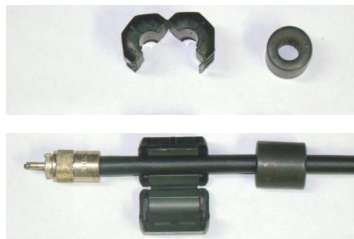


Figure C

November 2015

(Continued from page 21)

Threaded Beads & Snap-On
Ferrites—Figure 11

If there are remaining problems with RF, one can continue to raise the coax impedance further reducing common mode current flow by installing Snap-On ferrite chokes Figure 11, on the feed line. These chokes will further reduce unwanted current. Typically one might put one or two ferrites in series on the coax at the bottom of the tower, another pair about middle of the coax run and another pair where the coax enters the shack, as needed. Note that non-opening beads need to be threaded on before connectors are installed!

Another remedy is to coil up a few turns of the coax feed line which will act as an inductor and can be quite effective in preventing RF conduction down the feed line.

The coil can be installed at the feed point but this places a weight burden at that point which can prove difficult if the dipole is suspended only at the ends. The coil need not be there as an impedance can be inserted anywhere along the feed line. Note that the baluns and ferrites have greater broadband performance than the coils which tend to show a narrower range of suppression, perhaps effectively covering only 2 to 3 bands at a time.

For additional information please visit:
<http://www.nsarc.ca/hf/currentbalun.pdf>

~ John White VA7JW



Otto Eppers' QSL Card Of The Month.

Don't know Otto? See The Communicator September 2015



Changes to Antenna Systems Regulations

Radiocommunication and broadcasting services are important for all Canadians and are used daily by the public, safety and security organizations, government, wireless service providers, broadcasters, utilities and businesses. In order for radiocommunication and broadcasting services to work, antenna systems including masts, towers, and other supporting structures are required. Antenna systems are normally composed of an antenna and some type of supporting structure, often called an antenna tower. Most antennas have their own integral mast so that they can be fastened directly to a building or a tower. There is a certain measure of flexibility in the placement of antenna systems which is constrained to some degree by: the need to achieve acceptable coverage for the service area; the availability of sites; technical limitations; and safety. In exercising its mandate, Industry Canada believes that it is important that antenna systems be deployed in a manner that considers the local surroundings.

While the latest issue does not remove the 15m height exclusion, it does clarify how the height will be measured and some of the requirements for community consultation. See the full document at

<http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08777.html>

Some of the updates to Section 6 of CPC-2-0-03 are:

All proponents must consult the land-use authority and the public unless a proposal is specifically excluded. Individual circumstances vary with each antenna system installation and modification, and the exclusion criteria below should be applied in

consideration of local circumstances. Consequently, it may be prudent for the proponent to consult even though the proposal meets an exclusion noted below.

Therefore, when applying the criteria for exclusion, proponents should consider such things as:

- The antenna system's physical dimensions, including the antenna, mast, and tower, compared to the local surroundings;
- The location of the proposed antenna system on the property and its proximity to neighbouring residents;
- The likelihood of an area being a community-sensitive location; and
- Transport Canada's marking and lighting requirements for the proposed structure.

The following proposals are **excluded** from land-use authority and public consultation requirements, but must still satisfy the General Requirements outlined in Section Seven.

New Antenna Systems: where the height is less than 15 metres above ground level.

Existing Towers: modifications may be made, or the tower may be replaced, to facilitate sharing or the addition of antennas, provided that the total height increase is no greater than 25% of the height of the initial antenna system installation.

Footnote 6 suggests no increase in height may occur within one year of completion of the initial construction;

Non-Tower Structures: antennas on buildings, water towers, lamp posts, etc. may be installed provided that the height of the structure is not increased by more than 25%; and

Temporary Antenna Systems: used for special events or emergency operations and must be removed three months after the start of the emergency or special event.

No consultation is required prior to performing maintenance on an existing antenna system.

Proponents who are not certain if their proposals are excluded, or whether consultation may still be prudent, are advised to contact the land-use authority and/or Industry Canada for guidance.

Height is measured from the lowest ground level at the base, including foundation, to the tallest point of the antenna system. Any attempt to artificially reduce the height (addition of soil, aggregate, etc.) will not be taken into account in the measurement.

...does not remove the 15m height exclusion

November 2015



The SEPAR Report

Alan Saunders VA7BIT



*A reminder that the
SEPAR Weekly Net
now starts at 1915 Hrs
Tuesday*

First I would like to remind everyone that wants to participate in the weekly SEPAR net that we are now starting at 1915 on Tuesday nights. This new start time allows more of a window to perform simplex testing and relays. Up to this time we have only been using mostly VHF simplex frequencies. We will shortly start using a simplex test on UHF and eventually the 220 band during the net.

Thanks to all those who participated in the SET exercise on October 10. Also would like to thank all those who were able to check-in to the Great BC Shake-out on October 15. We presented the announcement simultaneously on both the Repeater via UHF and VHF simplex at 10:15. Following the announcement, we were able to take check-ins and log call signs on both the repeater and simplex. If you missed it or want to get more information about the annual Great BC Shake-out, you can go to the website at ShakeOutBC.ca.

The SEPAR meeting on October 22 had Ken Douglas as a guest speaker from NEPP (Neighbourhood Emergency Preparedness Program). Ken presented important information about Personal Emergency Preparedness. This was a good reminder for all of us as Amateur Radio operators to be prepared in an emergency by insuring that we and our family are provided for.

We know that before anyone is able to assist others in a disaster we must insure we are prepared ourselves. As a result of this need we will be planning additional presentations in SEPAR meetings in the upcoming months.

That is all for now. Please stay tuned to the SEPAR and SARC nets for announcements of upcoming events, training, and scenario based exercises.


~ Alan VA7BIT

Radio Preparedness:

Participating in a message handling or simplex exercise just once isn't sufficient. Each time you do an exercise you learn something new and what you already knew gets reinforced. Eventually it becomes natural. Training and preparedness never stops.

Build a small loop antenna: <http://www.hamradio.me/antennas/small-loop-hf-antenna.html>

November Events

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3 1915 SEPAR Net 2000 SARC Net	4 SARC General Meeting  Note Date Change	5	6	7 0900 Club Breakfast: Kalmar Family Restaurant, King George Blvd & 81 st Ave CONTEST: ARRL CW
8 CONTEST: ARRL CW	9 CONTEST: ARRL CW	10 1915 SEPAR Net 2000 SARC Net	11 Remembrance Day  Lest We Forget.	12	13	14 0900 Club Breakfast: Kalmar Family Restaurant, King George Blvd & 81 st Ave CONTEST: WAE RTTY, JIDX & Kentucky QSO
15 CONTEST: WAE RTTY, JIDX & Kentucky QSO	16	17 1915 SEPAR Net 2000 SARC Net	18	19	20	21 0900 Club Breakfast: Kalmar Family Restaurant, King George Blvd & 81 st Ave CONTEST: ARRL SSB
22 CONTEST: ARRL SSB SARC Christmas Party Booking Deadline	23 CONTEST: ARRL SSB	24 1915 SEPAR Net 2000 SARC Net	25 SARC Exec Meeting	26 US Thanksgiving	27 US 'Black' Friday Sales	28 0900 Club Breakfast: Kalmar Family Restaurant, King George Blvd & 81 st Ave CONTEST: CQ WW DX CW
29 CONTEST: CQ WW DX CW	30 Cyber Monday Sales	1	2	3	4	5

November 2015

CLUB EXECUTIVE 2015-2016

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(SEPAR Liaison)

Bill Gipps VE7XS

Al Peterson VA7ALZ



QRT

Mike Plant VE7AT—SARC President

Hello Everyone,

I am happy to be able to announce the 220 repeater project is nearing completion, I will have an announcement at the Nov 4th SARC business meeting. Furthermore our VHF and UHF Repeaters have been separated, with each having it's own IRLP Node. The VHF Node is 1736 and UHF is 1737, these two repeaters can be reconnected if needed.

I could not have achieved this project so quickly without the help of the following members, John VA7XB, George VE7QH, Dave VE7LTD and Steve VE7MAN, Thank you Gentlemen! We owe you.

This particular project is number three of four I had announced at the beginning of this fiscal year:

1. Each Executive member should chair a monthly business meeting, in the interest of making each meeting interesting for the membership.
2. The SARC weekly Breakfast moved to a day more accommodating to our working members. Which also allows family members and friends to join us for breakfast.
3. 220 Repeater "to finish the job I started in 08 - 09".
JOB DONE !!
4. Club House, what more can I say, except full steam ahead!!!

See you at the November meeting.

~ Mike VE7AT

On the Web

ve7sar.net

Between newsletters, watch your e-mail for announcements of events, monthly meetings and training opportunities. These announcements can also be found on our web page, or via:

Twitter

[@ve7sar](https://twitter.com/ve7sar)

FaceBook

[SurreyAmateurRadio](https://www.facebook.com/SurreyAmateurRadio)

Our YouTube Channel

[SurreyARC](https://www.youtube.com/SurreyARC)

SARC Photo Albums

[Web Albums](#)

or

tinyurl.com/SARCphoto

SARC CHRISTMAS PARTY




Where: Kalmar Restaurant, 8076 King George Boulevard, Surrey
When: 5th December, 2015 **Time:** 11:30 am until 2 pm
 SARC members and guests are cordially invited to attend
 SARC members and guests: \$25 per person
 Come and join us for; roast turkey and all the trimmings, salad bar, with apple crisp & ice cream and/or Blueberry cheese cake for dessert. Vegetarian option is lasagna. Tea & coffee.
 Awards and door prizes will be part of the event.



RSVP jinty.reid@gmail.com by 22nd November



It's November

Hope to see you all at the November 4th meeting, a change from the usual second Wednesday of the month necessitated by the Remembrance Day holiday on the 11th.

George VE7QH will present an informative talk on the British Columbia Amateur Radio Coordination Council and Fred VE7MPI has an interesting home brew 220 antenna to show us.

If you have an interesting home brew antenna to share, please bring it along.

Down The Log...

SARC Monthly Meetings

2nd Wed. (Sept-Jun)
1900 hr at the PREOC
Emergency Mgmt BC
14275 96th Avenue,
Surrey, BC

Weekly Club Breakfast

Saturday at 0900 hr
Kalmar Family Restaurant
8076 King George Blvd.
Surrey

SARC Net

Tuesday at 2000 hr local
on 147.360 MHz (+)
Tone=110.9

SEPARS Net

Tuesday at 1900 hr local
on 147.360 MHz (+)
Tone=110.9

VE7RSC Repeaters

2m: 147.360MHz+
Tone= 110.9Hz
IRLP node 1736
Echolink node 496228

1.2m: 223.960 Mhz -1.6
Tone=110.9

70cm: 443.775MHz+
Tone= 110.9Hz
IRLP node 1737

SARC hosts an Amateur Radio net each Tuesday evening at 8 PM. Please tune in to the VE7RSC repeater at 147.360 MHz (+600 KHz) Tone=110.9Hz, also accessible via Echolink node 496228.

	SEPARS Net 19:15 Hrs	SARC Net 20:00 Hrs
1 st Tuesday Standby	Drew VA7DRW Jay VE7KC	Drew VA7DRW Brett VE7GM
2 nd Tuesday Standby	Dixie VA7DIX Alan VA7BIT	Jinty VA7JMR Sheldon VA7XNL
3 rd Tuesday Standby	Rob VE7CZV Vacant	Rob VE7CZV Vacant
4 th Tuesday Standby	Jinty VA7JMR Dixie VA7DIX	John VA7XB Ralph VA7UB
5 th Tuesday Standby	Jinty VA7JMR Vacant	Elizabeth VE7ELA Kapila VE7K GK
Want a turn at Net Control? Contact the SARC Net Manager VE7CZV @ separs.net		



We Have A SARC Patch!

These are suitable for sewing on a jacket, cap or your jammies, so you can proudly display your support for the club.

The price is \$4 each or three for \$10 and they can be picked up at a meeting or the weekly breakfast.

Burnaby Radio Communications

Michael J. Wong VE7HMY
President/Owner
Commercial / Amateur Radio

4257 Hastings Street
Burnaby, B.C. V5C 2J5
Phone 604-298-5444
Fax 604-298-5455

Email: sales@burnabyradio.com
web: www.burnabyradio.com



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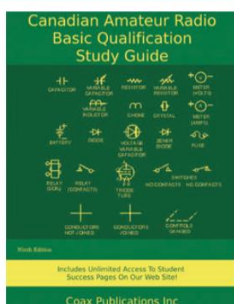
QUAD BANDS TRANSMISSION (including SW)
EIGHT BANDS RECEPTION (including AM & SW)

Twin Band/Same Band Simultaneous Reception;
Duplex Mode (Cross-Band Simultaneous TX&RX) Duplex Cross-Band Repeat;
Same-Band Repeat on two Combined Radios; 8 groups of Scrambler SOS Function



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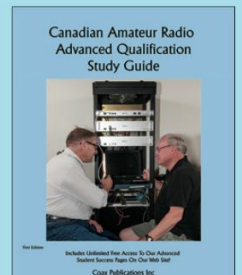
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